

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested in view of the above amendments and the following remarks.

Claims 1-9 are pending in this application. By this amendment, Claims 1 and 8 have been amended; and Claim 9 has been added. Support for the amendments to Claims 1 and 8 is found, by way of non-limiting example, in application FIGs. 2 and 3, and the corresponding specification description. Accordingly, it is respectfully submitted that no new matter has been added.

In the outstanding Office Action, Claims 1, 2 and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Background Art (specification page 1, line 14 to page 4, line 10, hereinafter “BA”)¹ In view of Yoshikawa et al. (Phase Optimization of Kinoform by Simulated Annealing, Applied Optics, Vol. 33, No. 5; February 10, 1994, hereinafter “Yoshikawa”); and Claims 3-5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over BA in view of Yoshikawa as applied to Claim 1 above, and further in view of Payne et al. (US 2004/0021768 A1, hereinafter “Payne”).²

Claims 1 and 8 recite, in part:

wherein the predetermined condition is information regarding an optical wavefront control unit and a condition restricting a region to be calculated of a three-dimensional image of each pixel of a control image recorded in the optical wavefront control unit.

It is respectfully submitted that these features are neither disclosed by nor rendered obvious by BA, Yoshikawa, Payne, or the combination thereof.

¹ The Office Action asserts that this portion of the specification is admitted prior art. However, there is no such statement in the specification.

² The opening statement of the rejection indicates that Claims 3-5 have been rejected, however, the body of the rejection discusses Claims 6 and 7 as well. Accordingly, it is understood that Claims 3 to 7 have been rejected over BA in view of Yoshikawa and Payne.

Yoshikawa describes that when a liquid-crystal spatial light modulator (LCSLM) is used as recording device (optical wavefront control unit), a kinoform (control image) is calculated so as to be suitable for a characteristic of the LCSLM. Thus, Yoshikawa states “[t]he optimized kinoform is synthesized with a liquid-crystal spatial light modulator[footnote omitted] (LCSLM) as the recording device.”³ In Yoshikawa, “[t]he kinoform is optimized to adjust to the characteristics of the LCSLM.”⁴

In contrast to the invention as recited in Claims 1 and 8, however, Yoshikawa does not describe that the characteristic of the LCSLM “restricts a region to be calculated of a three-dimensional image.”

Rather, Yoshikawa corresponds to the technology described in the Background Art section of the specification. In the technology of the Background Art, a comparison is made between image to be reconstructed given as an input and a reconstructed image obtained by Fourier transforming the phased distribution of an optical wavefront on a kinoform, to evaluate solutions before and after a Move operation. This technology has the problem that since a control image obtained by Fourier transforming and input images used as an initial solution, when the fast Fourier transformation algorithm is used, a calculation amount of high complexity is required for evaluating the initial solution thereby making it impossible to shorten the time required for searching for an optimum solution. Furthermore, when calculation is performed on the assumption that change of one point on the kinoform has an effect on every point of the reconstructive image, redundant calculations are performed. Like the Background Art, Yoshikawa fails to correct the above-described problems because Yoshikawa does not describe that the characteristic of the LCSLM restriction region to be calculated of a three-dimensional image as recited in Claims 1 and 8.

³ Introduction, third paragraph.

⁴ Id.

Payne describes a reconfigurable-three-dimensional display wherein knowledge of the viewer's eyes is used to enable the effective exit pupils of the display system to be optimized. Payne utilizes this knowledge to identify contributing regions within the display that contribute light to the viewer.⁵ Thus Payne states that the invention is directed to "minimizing the computation time required to generate a Computer Generated Hologram (CGH)."⁶ Payne refers to prior proposals for incorporating movable exit pupils within the system⁷ including head tracking⁸ and eye-position tracking⁹. Payne, however, is directed to positioning of effective exit pupils which requires no moving parts in the system.¹⁰

It is respectfully submitted that dependent Claims 2-7 and 9 are patentable at least for the reasons argued above with regard to Claim 1 from which they depend.

Accordingly, it is respectfully requested that the rejections of Claims 1-8 be reconsidered and withdrawn, and that Claims 1-9 be passed to allowance.

Consequently, for the reasons discussed in detail above, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance of earnestly solicited.

⁵ Abstract.

⁶ Paragraph [0001].

⁷ Paragraph [0006].

⁸ Paragraph [0007].

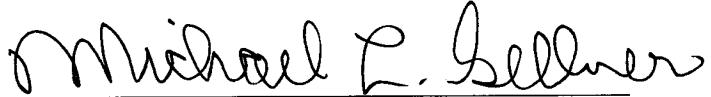
⁹ Paragraph [0009].

¹⁰ Paragraph [0018].

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below-listed telephone number.

Respectfully submitted,

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